

CLAIM AMENDMENTS

1. (Currently Amended) A high-frequency waveguide comprising:
a first high-frequency reflecting wall including dielectric bars having respective lengths, each dielectric bar comprising a plurality of columnar bodies having respective axes and concentrically varying dielectric constants so that the dielectric constant on the ~~axis~~ respective axes is lower than ~~off the dielectric constant spaced from the axis~~ respective axes, the dielectric bars of the first high-frequency reflecting wall being disposed in plural layers so that ~~the~~ respective axes of the dielectric bars of the first high-frequency reflecting wall describe corners of a regular polygon lying in a plane perpendicular to the axes of the dielectric bars of the first high-frequency reflecting wall;
a second high-frequency reflecting wall opposite, spaced from, and parallel to the first high-frequency reflecting wall, with a dielectric interposed between the first and second high-frequency reflecting walls, the second high-frequency reflecting wall including dielectric bars having respective lengths, each dielectric bar of the second high-frequency reflecting wall comprising a plurality of columnar bodies having respective axes and concentrically varying dielectric constants so that the dielectric constant on the ~~axis~~ respective axes is lower than ~~off the dielectric constant spaced from the axis~~ respective axes, the dielectric bars of the second high-frequency reflecting wall being disposed in plural layers so that ~~the~~ respective axes of the dielectric bars of the second high-frequency reflecting wall describe corners of a regular polygon in a plane perpendicular to the respective axes of the dielectric bars of the second high-frequency reflecting wall; and
conductive plates which are opposite each other, with the first and second high-frequency reflecting walls interposed between the conductive plates and end faces of the dielectric bars of the first and second high-frequency reflecting walls connected to the conductive plates.
2. (Currently Amended) The high-frequency waveguide according to claim 1, wherein the dielectric bars of the first and second high-frequency reflecting walls are cylindrical.
3. (Currently Amended) The high-frequency waveguide according to claim 1, wherein the dielectric bars of the first and second high-frequency reflecting walls are hollow.

4. (Currently Amended) The high-frequency waveguide according to claim 2, wherein the dielectric bars of the first and second high-frequency reflecting walls are hollow.

5. (Previously Presented) The high-frequency waveguide according to claim 1, wherein the dielectric interposed between the first high-frequency reflecting wall and the second high-frequency reflecting wall is air.

6. (Previously Presented) The high-frequency waveguide according to claim 2, wherein the dielectric interposed between the first high-frequency reflecting wall and the second high-frequency reflecting wall is air.

7. (Currently Amended) The high-frequency waveguide according to ~~claims~~ claim 1, including metal walls located outside the dielectric bars of the first and second high-frequency reflecting walls and corresponding to outermost layers of the first and second high-frequency reflecting walls.

8. (Currently Amended) The high-frequency waveguide according to ~~claims~~ claim 2, including metal walls located outside the dielectric bars of the first and second high-frequency reflecting walls and corresponding to outermost layers of the first and second high-frequency reflecting walls.

9. (Currently Amended) The high-frequency waveguide according to ~~claims~~ claim 3, including metal walls located outside the dielectric bars of the first and second high-frequency reflecting walls and corresponding to outermost layers of the first and second high-frequency reflecting walls.

10. (Currently Amended) The high-frequency waveguide according to ~~claims~~ claim 4, including metal walls located outside the dielectric bars of the first and second high-frequency reflecting walls and corresponding to outermost layers of the first and second high-frequency reflecting walls.

11. (Currently Amended) The high-frequency waveguide according to ~~claims~~ claim 5, including metal walls located outside the dielectric bars of the first and second

high-frequency reflecting walls and corresponding to outermost layers of the first and second high-frequency reflecting walls.

12. (Currently Amended) The high-frequency waveguide according to ~~claims~~ claim 6, including metal walls located outside the dielectric bars of the first and second high-frequency reflecting walls and corresponding to outermost layers of the first and second high-frequency reflecting walls.

13. (Currently Amended) The high-frequency waveguide according to claim 7, wherein the metal walls respectively comprise metal bar arrays in which metal bars substantially identical in length to the dielectric bars of the first and second high-frequency reflecting walls are disposed along the dielectric bars of the first and second high-frequency reflecting walls.

14. (Currently Amended) The high-frequency waveguide according to claim 8, wherein the metal walls respectively comprise metal bar arrays in which metal bars substantially identical in length to the dielectric bars of the first and second high-frequency reflecting walls are disposed along the dielectric bars of the first and second high-frequency reflecting walls.

15. (Currently Amended) The high-frequency waveguide according to claim 9, wherein the metal walls respectively comprise metal bar arrays in which metal bars substantially identical in length to the dielectric bars of the first and second high-frequency reflecting walls are disposed along the dielectric bars of the first and second high-frequency reflecting walls.

16. (Currently Amended) The high-frequency waveguide according to claim 10, wherein the metal walls respectively comprise metal bar arrays in which metal bars substantially identical in length to the dielectric bars of the first and second high-frequency reflecting walls are disposed along the dielectric bars of the first and second high-frequency reflecting walls.

17. (Currently Amended) The high-frequency waveguide according to claim 11, wherein the metal walls respectively comprise metal bar arrays in which metal bars substantially identical in length to the dielectric bars of the first and second high-

frequency reflecting walls are disposed along the dielectric bars of the first and second high-frequency reflecting walls.

18. (Currently Amended) The high-frequency waveguide according to claim 12, wherein the metal walls respectively comprise metal bar arrays in which metal bars substantially identical in length to the dielectric bars of the first and second high-frequency reflecting walls are disposed along the dielectric bars of the first and second high-frequency reflecting walls.

19. (Currently Amended) A method of manufacturing a high-frequency waveguide including:

laminating dielectric bars having respective lengths, each dielectric bar comprising a plurality of columnar bodies having respective axes and concentrically varying dielectric constants so that the dielectric constant is lower on the ~~axis~~ respective axes than ~~off-axis~~ spaced from the respective axes, in plural layers so that the respective axes of the dielectric bars describe corners of a regular polygon in a plane perpendicular to the respective axes, thereby forming first and second high-frequency reflecting walls; and

placing the first and second high-frequency reflecting walls opposite each other, parallel to each other, and spaced from each other, placing conductive plates opposite each other, with the first and second high-frequency reflecting walls interposed between the conductive plates, and connecting the conductive plates to respective end faces of the dielectric bars ~~of the first and second high-frequency walls~~.

20. (Previously Presented) The method according to claim 19, further including forming metal walls outside the dielectric bars corresponding to outermost layers of the first and second high-frequency reflecting walls.

AMENDMENTS TO THE DRAWINGS

The Examiner is requested to approve the changes to Figures 2, 3, 5, 6, and 7-11, as shown on the attached replacement sheets of drawings.

In the replacement drawings, hatching lines are corrected in Figures 3, 5, 6, and 11. Additional reference numbers are added in Figures 8 and 10. Prior art labels are added to Figures 7-11. All of these changes are made in response to specific requests from the Examiner.

Attachment: Replacement Sheet(s)